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Permit Fact Sheet

1 General Information

Permit Number:	WI-0031402-05-0	
Permittee Name:	WI DELLS-LAKE DELTON SEWERAGE COMMISSION	
Address:	PO Box 87	
City/State/Zip:	Lake Delton WI 53940	
Discharge Location:	8 South Bowman Road, Wisconsin Dells, WI (SWQ NEQ Section 15, T14N-R6E)	
Receiving Water:	Wisconsin River (Duck Creek Watershed, LW25 – Lower Wisconsin River Basin) in Columbia County	
StreamFlow ($Q_{7,10}$):	1790 cfs	
Stream Classification:	WWSF	
Design Flow(s)	Daily Maximum	4.87 mgd
	Weekly Maximum	NA
	Monthly Maximum	NA
	Annual Average	2.83 mgd
Significant Industrial Loading?	None.	
Operator at Proper Grade?	No. Must pass Advanced Activated Sludge and Advanced Phosphorus tests.	
Pretreatment Program Approval Date:	NA	

2 Facility Description

The Wisconsin Dells-Lake Delton Sewerage Commission operates a secondary WWTP with phosphorus removal providing treatment for a combination of domestic and recreational wastewater. Treatment units include: influent monitoring and screening, aerated grit removal, 3 ring oxidation ditch secondary treatment and biological phosphorus removal, polishing chemical phosphorus removal as needed, final clarification, seasonal chlorine contact disinfection and SO2 dechlorination with effluent discharge to the Wisconsin River. Sludge is aerobically digested, pressed to cake and either land applied or stored onsite during winter. The facility is designed to treat an average wet weather flow of 2.83 mgd and presently receives an annual average of 1.384 mgd for treatment.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
701	0.471 mgd (9/02 – 8/03)	Representative influent samples shall be collected from the Wisconsin Dells influent force main prior to the bar screen and grit removal.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
702	0.913 mgd (9/02 – 8/03)	Representative influent samples shall be collected from the Lake Delton influent force main prior to the bar screen and grit removal.
001	1.398 mgd (9/02 – 8/03)	Representative effluent samples shall be collected at the parshall flume for composite samples (including pH when not chlorinating) and from the effluent manhole for grab samples, prior to discharge to the Wisconsin River.
002	346 dry US tons (2002)	Aerobically digested, Cake, Class B. Representative sludge samples shall be collected after the belt press, from the cake sludge storage area, prior to land application.
101	NA	In-Plant Monitoring - Collect the mercury field blank using standard sample handling procedures.

3 Influent - Proposed Monitoring

3.1 Sample Point Number: 701- INFLUENT - WI DELLSand 702- INFLUENT - LAKE DELTON

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	24-Hr Flow Prop Comp	See the "mercury monitoring" footnote below.
Phosphorus, Total		mg/L	Weekly	24-Hr Flow Prop Comp	Data to reapply for APL 07/01/2007 - 09/30/2007

3.1.1 Changes from Previous Permit:

Quarterly mercury sampling required and influent phosphorus monitoring required for APL calculation prior to next reissuance.

3.1.2 Explanation of Limits and Monitoring Requirements

New NR106.145 monitoring requirements for WWTPs over 1 mgd actual flow.

4 Inplant - Proposed Monitoring and Limitations

4.1 Sample Point Number: 101- GENERAL PLANT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	See the "mercury monitoring" footnote below.

4.1.1 Changes from Previous Permit:

Hg trip blank required as part of Hg monitoring strategy

4.1.2 Explanation of Limits and Monitoring Requirements

New NR106.145 Hg monitoring requirement for WWTPs with actual flows over 1 mgd.

5 Surface Water - Proposed Monitoring and Limitations

5.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	May 1 through Sept 30 See footnote 3.2.1.5 below.
Fecal Coliform	Geometric Mean	400 #/100 ml	Weekly	Grab	May 1 through Sept 30
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Phosphorus, Total	Monthly Avg	1.5 mg/L	5/Week	24-Hr Flow Prop Comp	Chemical TP removal mo. avg. limitation is 1.0 mg/L (>25% chemical usage

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					excluding side streams chemical usage)
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	Jan 1, 2004 through Dec 31, 2006 Monitor Only
Copper, Total Recoverable	Daily Max	44 ug/L	Monthly	24-Hr Flow Prop Comp	Limitation effective 01/01/2007. This limit is based on the dissolved form of Cu.
Copper, Total Recoverable	Daily Max	1.8 lbs/day	Monthly	Calculated	Limitation effective 01/01/2007. This limit is based on the dissolved form of Cu.
Mercury, Total Recoverable		ng/L	Quarterly	Grab	Monitor Only - See "mercury monitoring" footnote below.
Hardness, Total as $CaCO_3$		mg/L	Quarterly	24-Hr Flow Prop Comp	
Acute WET		TUa	Quarterly	24-Hr Flow Prop Comp	April 1-June 30, 2005 October 1-Dec 31, 2006 July 1-September 30, 2007 January 1-March 31, 2008 4 tests total
Nitrogen, Ammonia (NH3-N) Total		mg/L	2/Month	24-Hr Flow Prop Comp	Jan 1, 2007 - Dec 31, 2007 Monitor Only - 2 weeks between samples
Chloride		mg/L	2/Month	24-Hr Flow Prop Comp	July 1, 2007 - Dec 31, 2007 Monitor Only - 2 weeks between samples

5.1.1 Changes from Previous Permit

Monitoring frequency for pH reduced to be similar to other parameters. Copper limit now applies due a significant increase in effluent copper concentrations from the last reissuance. Mercury monitoring will be required per rules effective November 2002. Ammonia-N and chloride monitoring required at the end of the permit term to provide data for the next reissuance.

5.1.2 Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Please refer to the Water Quality Based Effluent Limits (WQBEL) memo for the detailed calculations, prepared by Nasrin Mohajerani dated September 23, 2003, for this reissuance.

Disinfection – The total residual chlorine limits were evaluated in the WQBEL memo. Recommendations include a concentration limit of 38 ug/L with a mass limit of 1.5 lb/d (max). These concentration and mass limits are based on NR 105-106, Wis. Adm. Code. UV disinfection will be installed at the upgrade so these limits will no longer apply at that time.

Chloride – Effluent concentrations (P99s) were below the calculated acute & chronic limitation, so a limit is not needed (WQBEL). The permit requires monitoring in the fourth year which will be used for the next reissuance process.

WET – WET monitoring periods based on the WET checklist and/or is brought to current standard EPA (4 acute minimum) municipal major WWTF monitoring periods for acute. Chronic monitoring not required due to receiving water flow to effluent flow >100:1 per WET guidance (WQBEL).

Mercury – actual flow >1.0 MGD on an annual basis so, influent/blank/effluent mercury monitoring will be required per rules effective November 2002.

Toxics - Toxic parameters (PPS) were reviewed in the WQBEL memo dated September 23, 2003. Copper concentrations have more than doubled from the previous reissuance which now indicates the need for a limitation. Dissolved copper limits reviewed in a memo dated October 29, 2003. The majority of the other parameters were below levels of detection (WQBEL).

Ammonia-N – Large receiving stream so ammonia-N limitations not applicable but will be reviewed when new WI ammonia criterion, policy and guidance are finalized so, monitoring will be required in the fourth year of the permit to provide data for the next reissuance. Acute limitations (daily maximum) may be applicable based on draft calculations contained in the WQBEL.

Categorical Limits

BOD and suspended solids - Limitations for both parameters are carried over from the previous permit reissuance and remain unchanged.

Phosphorus – The permit limitation remains at 1.5 mg/L for biological phosphorus removal.

http://www.dnr.state.wi.us/org/water/wm/ww/mercury/mercury.htm

6 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	B	Cake	Fecal Coliform	Incorporation	Land appl.	346
Does sludge management demonstrate compliance? Yes.						
Is additional sludge storage required? No, but will be added at upgrade.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No data. If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
Is a priority pollutant scan required? No. Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

6.1 Sample Point Number: 002- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Jan 1, 2005 - Dec 31, 2005
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Jan 1, 2005 - Dec 31, 2005
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	

6.1.1 Changes from Previous Permit:

None.

6.1.2 Explanation of Limits and Monitoring Requirements

Standard NR204 municipal major WWTP sludge monitoring requirements.

7 Compliance Schedules

7.1 Chemical Specific Toxic Pollutants

Required Action	Date Due
Report on Effluent Discharges: Submit a report on effluent discharges of Copper with conclusions regarding compliance. If the limits cannot be met, submit a plan of action for implementing source reduction activities as outlined in s. NR 106.06(7)(c).	01/01/2005
Action Plan: Submit an action plan for complying with the effluent limitation.	07/01/2005
Initiate Actions: Initiate actions identified in the plan.	01/01/2006
Complete Actions: Complete actions necessary to achieve compliance with the effluent limitations.	01/01/2007

7.2 Explanation of Compliance Schedules

Effluent copper limits were calculated and applied at this reissuance.

8 Special Reporting Requirements

Since the Sewerage Commission has chosen a copper limit based on the dissolved process, receiving water monitoring will be required for TR and dissolved Cu, TSS and hardness. A document titled “Guidance on Low Level Monitoring for the Dissolved-Based Metals Approach in Permits“ contains the procedures for conducting this receiving water monitoring.

9 Other Comments:

Facility is in planning for a major WWTP upgrade due to growth in the tourist industry.

10 Attachments:

Substantial Compliance Determination – 10/06/2003

Categorical Limits Calculations – TP – reviewed as part of the previous reissuance

Water Quality Based Effluent Limits – PPS, Ammonia-N, Chlorine, Chloride – 09/23/2003/Dissolved Cu 10/29/2003 (WQBEL)

WET Checklist Summary – 09/23/2003 (WQBEL)

Public Notice – 10/06/2003

11 Proposed Expiration Date:

December 31, 2008

Prepared By:

George Osipoff PE, Lower Wisconsin River Basin Wastewater Engineer

Date: October 6, 2003